

CLAIMS

WHAT IS CLAIMED IS:

1. A system for dispensing flowable materials comprising a flexible package and a receiver apparatus for said package, said package having a hollow interior in which the flowable material is located and including at least one wall portion formed of a penetratable material, said receiver apparatus comprising an opening for receipt of said package, a penetrating portion and an outlet, said at least one wall portion of said package being arranged to be penetrated by said penetrating portion of said receiver apparatus after said package is introduced into said opening, whereupon the flowable material is enabled to flow out of said package for dispensing out of said outlet of said receiver apparatus.
- 15 2. The system of Claim 1 wherein said package has a base wall and wherein said at least one wall portion of said package is located at said base wall and wherein said receiver apparatus is a hollow member having a cavity in communication with said opening said package being arranged to be placed and moved through said opening, said cavity being disposed below said opening for receipt of the flowable material from said package, said penetrating portion of said receiver apparatus being located below said opening to engage said base wall of said package when said package is moved through said opening to form an aperture in said base wall, whereupon said flowable material can flow into said cavity.
- 20 3. The system of Claim 2 wherein said penetrating portion of said receiver apparatus comprises at least one blade.
- 25 4. The system of Claim 3 wherein said penetrating portion includes plural blades disposed in a generally pyramidal configuration and merging together at a point, said plural blades being mounted within said receiver apparatus below said opening and with said point being directed upward towards said opening, whereupon when said package is moved through said opening said base wall engages said point and said blades cut said aperture in said base wall of said package.

5. The system of Claim 4 wherein said base wall of said package is of a regular geometric shape having plural corners and wherein said opening is of a corresponding shape and size to said base wall of said package to closely receive said base wall of said package.

6. The system of Claim 5 wherein said penetrating portion of said receiver apparatus includes a respective blade for each corner of said opening, with each blade extending from said respective corner of said opening to said point.

10 7. The system of Claim 6 additionally comprising at least one movable leaf located at said opening and arranged to be moved from a closed position to an open position in response to the movement of said package through said opening.

15 8. The system of Claim 7 wherein said at least one moveable leaf is arranged to close said opening when said package is removed from said opening.

9. The system of Claim 8 wherein said at least one moveable leaf is biased to automatically close said opening when said package is removed from said opening.

20 10. The system of Claim 1 wherein said receiver apparatus includes a lid for disposition over said opening.

25 11. The system of Claim 2 wherein said package is arranged to be moved through said opening by the force of gravity acting on said package, whereupon said base wall of said package is brought into engagement with said penetrating portion of said receiver apparatus.

30 12. The system of Claim 4 wherein said receiver apparatus additionally comprises a movable support for supporting said package with respect to said cavity and for enabling said flexible package to move under the force of gravity to bring said package into contact with said at least one blade.

13. The system of Claim 12 wherein said movable support is spring biased.

35 14. The system of Claim 13 wherein said base wall of said package is of a regular geometric shape having plural corners and wherein said opening is of a corresponding shape and size to

said base wall of said package to closely receive said base wall of said package.

15. The system of Claim 14 wherein said penetrating portion of said receiver apparatus includes a respective blade for each corner of said opening, with each blade extending from said respective corner of said opening to said point.

5 16. The system of Claim 15 wherein said receiver apparatus additionally comprises at least one movable leaf arranged to be moved from a closed position to an open position in response to 10 the movement of said movable support to enable the contents of said package to flow out of said package into said cavity.

15 17. The system of Claim 1 wherein said receiver apparatus is a hollow member having an interior chamber for receipt of said package and a base in which said outlet is located, said penetrating portion of said receiver apparatus being located adjacent said outlet.

20 18. The system of Claim 17 wherein said base wall of said package is of a regular geometric shape having plural corners and wherein said interior chamber of said receiver apparatus is of a corresponding shape and size to said base wall of said package to closely receive said base wall of said package.

25 19. The system of Claim 18 wherein said penetrating portion of said receiver apparatus includes a respective blade for each corner of said chamber, with each blade extending from a position adjacent said respective corner of said chamber to said point.

30 20. A receiver apparatus for dispensing a flowable material therefrom, said receiver apparatus being arranged to be used with a flexible package having a hollow interior in which the flowable material is located and including at least one wall portion formed of a penetratable material, said receiver apparatus comprising a penetrating portion and an outlet, the at least one wall portion of the package being arranged to be penetrated by said penetrating portion of said receiver apparatus, whereupon the flowable material is enabled to flow

out of the package for dispensing out of said outlet of said receiver apparatus.

21. The receiver apparatus of Claim 20 wherein said package has a base wall and wherein said at least one wall portion of said package is located at said base wall and wherein said receiver apparatus is a hollow member having an opening into which said package is arranged to be placed and moved therethrough and a cavity disposed below said opening for receipt of the flowable material from said package, said penetrating portion of said receiver apparatus being located below said opening to engage said base wall of said package when said package is moved through said opening to form an aperture in said base wall, whereupon said flowable material can flow into said cavity.

15 22. The receiver apparatus of Claim 21 wherein said penetrating portion of said receiver apparatus comprises at least one blade.

23. The receiver apparatus of Claim 22 wherein said penetrating portion includes plural blades disposed in a generally pyramidal configuration and merging together at a point, said plural blades being mounted within said receiver apparatus below said opening and with said point being directed upward towards said opening, whereupon when said package is moved through said opening said base wall engages said point and said blades cut said aperture in said base wall of said package.

24. The receiver apparatus of Claim 23 wherein said base wall of said package is of a regular geometric shape having plural corners and wherein said opening is of a corresponding shape and size to said base wall of said package to closely receive said base wall of said package.

30 25. The receiver apparatus of Claim 24 wherein said penetrating portion of said receiver includes a respective blade for each corner of said opening, with each blade extending from said respective corner of said opening to said point.

35 26. The receiver apparatus of Claim 25 additionally comprising at least one movable leaf located at said opening and

arranged to be moved from a closed position to an open position in response to the movement of said package through said opening.

5 27. The receiver apparatus of Claim 26 wherein said at least one moveable leaf is arranged to close said opening when said package is removed from said opening.

28. The receiver apparatus of Claim 27 wherein said at least one moveable leaf is biased to automatically close said opening when said package is removed from said opening.

10 29. The receiver apparatus of Claim 20 wherein said receiver apparatus includes a lid for disposition over said opening.

15 30. The receiver apparatus of Claim 21 wherein said package is arranged to be moved through said opening by the force of gravity acting on said package, whereupon said base wall of said package is brought into engagement with said penetrating portion of said receiver.

20 31. The receiver apparatus of Claim 23 wherein said receiver apparatus additionally comprises a movable support for supporting said package with respect to said cavity and for enabling said flexible package to move under the force of gravity to bring said package into contact with said at least one blade.

25 32. The receiver apparatus of Claim 31 wherein said movable support is spring biased.

30 33. The receiver apparatus of Claim 32 wherein said base wall of said package is of a regular geometric shape having plural corners and wherein said opening is of a corresponding shape and size to said base wall of said package to closely receive said base wall of said package.

34. The receiver apparatus of Claim 33 wherein said penetrating portion of said receiver includes a respective blade for each corner of said opening, with each blade extending from said respective corner of said opening to said point.

35 35. The receiver apparatus of Claim 34 wherein said receiver apparatus additionally comprises at least one movable

leaf arranged to be moved from a closed position to an open position in response to the movement of said movable support to enable the contents of said package to flow out of said package into said cavity.

5 36. The receiver apparatus of Claim 20 wherein said receiver apparatus is a hollow member having an interior chamber for receipt of said package and a base in which said outlet is located, said penetrating portion of said receiver apparatus being located adjacent said outlet.

10 37. The receiver apparatus of Claim 36 wherein said base wall of said package is of a regular geometric shape having plural corners and wherein said interior chamber of said receiver apparatus is of a corresponding shape and size to said base wall of said package to closely receive said base wall of 15 said package.

20 38. The receiver apparatus of Claim 37 wherein said penetrating portion of said receiver includes a respective blade for each corner of said chamber, with each blade extending from a position adjacent said respective corner of said chamber to 25 said point.

30 39. A package for use in a system for dispensing a flowable material, the system including an opening, at least a bottom portion of which is of a regular geometric shape and into which said package is arranged to be disposed, said package being arranged to be filled with a flowable material and comprising a front panel having a linear bottom edge, a rear panel having a linear bottom edge and a gusseted bottom panel interconnecting said bottom edges of said front panel and said rear panel, each of said panels being formed of a flexible material and having a first linear, side edge and a second linear side edge, said first and second linear side edges being disposed opposite and parallel to each other, said gusseted bottom panel including a front gusset section and a rear gusset section, said front gusset section being connected to said front panel along said bottom edge of said front panel, said rear gusset section being 35 connected to said rear panel along said bottom edge of said rear

panel, said front and rear gusset sections being connected together along a central fold line extending parallel to said bottom edges of said front and rear panels, said front gusset section being secured to said front panel adjacent said first linear side edge of said front panel by a first angled linear seal line extending at an acute angle to said first linear side edge of said front panel, said rear gusset section being secured to said rear panel adjacent said first linear side edge of said rear panel by a second angled linear seal line extending at an acute angle to said first linear side edge of said rear panel,
5 said front gusset section being secured to said front panel adjacent said second linear side edge of said front panel by a third angled linear seal line extending at an acute angle to said second linear side edge of said front panel, said rear gusset section being secured to said rear panel adjacent said second linear side edge of said rear panel by a fourth angled linear seal line extending at an acute angle to said second linear side edge of said rear panel, said front panel and said rear panel being secured to each other along said first linear
10 side edge and along said second linear side edge, said package being arranged to be filled with a flowable material and when so filled said package forms a four-sided, regular geometrically shaped bottom portion, said bottom portion of said filled package having a generally planar base wall, a front wall portion, a rear wall portion, a first sidewall portion and a second sidewall portion, said front wall portion projecting upward from said base wall along said linear bottom edge of said front panel, said rear wall portion projecting upward from said base wall along said linear bottom edge of said rear panel, said
15 first sidewall projecting upward from said base wall between said front and rear wall portions on one side of said package, said second sidewall projecting upward from said base wall portion between said front and rear wall portions on the opposite side of said package, said generally regular geometric shaped bottom portion of said package generally corresponding to the shape of the opening of the system, whereupon said package
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can be introduced into the opening so that said base wall of said package is penetrated by a portion of the system to form an aperture therein to enable the flowable material within said package to flow out of said package through said aperture for dispensing, without any portion of said package interfering with the free flow of the flowable material out of said package.

5 40. The package of Claim 39 wherein at least a portion of the periphery of said base wall is constructed to control the propagation of the cut in said package.

10 41. The package of Claim 40 wherein said at least a portion of the periphery of said base wall comprises portions contiguous with said front and rear wall portions.

42. The package of Claim 41 wherein said portions of said periphery of said base wall are corrugated.

15 43. The package of Claim 39 wherein said package comprises a first flap portion and a second flap portion, said first flap portion being formed of portions of said front and rear panels contiguous with said first linear side edge and said first and second angled seal lines, respectively, said second flap portion being formed of portions of said front and rear panels contiguous with said second linear side edge and said third and fourth angled seal lines, respectively, each of said flap portions being removed prior to filling said package.

20 25 44. The package of Claim 43 wherein said package is fabricated by cutting said first flap portion from the remainder of said package contiguous with said first and second angled seal lines and by cutting said second flap portion from the remainder of said package contiguous with said third and fourth angled seal lines.

30 35 45. The package of Claim 39 wherein additionally comprising a first flap portion formed of portions of said front and rear panels contiguous with said first linear side edge and said first and second angled seal lines, respectively, and a second flap portion formed of portions of said front and rear panels contiguous with said second linear side edge and said third and fourth angled seal lines, respectively, said first

flap portion extending over said first sidewall between said first and second angled seal lines and being adhesively secured to said first sidewall, said second flap portion extending over said second sidewall between said third and fourth angled seal lines and being adhesively secured to said second sidewall.

5 46. The package of Claim 45 wherein said first flap is adhesively secured to said first sidewall immediately adjacent said base wall and said second flap is adhesively secured to said second sidewall immediately adjacent said base wall.

10 47. The package of Claim 46 wherein at least a portion of the periphery of said base wall is constructed to control the propagation of the cut in said package.

15 48. The package of Claim 47 wherein said at least a portion of the periphery of said base wall comprises portions contiguous with said front and rear wall portions.

49. The package of Claim 48 wherein said portions of said periphery of said base wall are corrugated.

50. The package of Claim 39 wherein said bottom portion of said package is of a generally parallelepiped shape.

20 51. The package of Claim 39 wherein each of said angled linear seal lines extends at approximately 45 degrees to its associated linear side edge.

25 52. The package of Claim 45 wherein each of said angled linear seals extends at approximately 45 degrees to its associated linear side edge.

53. The package of Claim 39 wherein each of said angled linear seals extends at an angle greater than 45 degrees to its associated linear side edge.

30 54. The package of Claim 45 wherein each of said angled linear seals extends at an angle greater than 45 degrees to its associated linear side edge.

55. The package of Claim 42 wherein said corrugated portions of said package comprise crimped heat seals.

35 56. The package of Claim 49 wherein said reinforced portions of said package comprise crimped heat seals.

57. The package of Claim 39 wherein said base wall is arranged to be punctured or cut when it comes into contact with the point of at least one knife blade with at least a predetermined force.

5 58. The package of Claim 57 wherein said base wall is constructed of at least a laminate film.

59. The package of Claim 57 wherein said base wall is constructed of at least a coextruded film.

10 60. A method of dispensing a flowable material from a flexible package comprising:

(a) providing a package holding a flowable material, said package having a penetratable wall portion;

15 (b) providing a receiver apparatus for receiving said flexible package, said receiver apparatus having a penetrating portion for penetrating said penetratable wall portion of said package;

(c) placing said package into or onto said receiver apparatus; and

20 (d) moving said package into engagement with said penetrating portion of said receiver apparatus, whereupon said penetrating portion of said receiver apparatus penetrates said penetratable portion of said package to enable the flowable contents of said package to flow thereout for dispensing by said receiver apparatus.

25 61. The method of Claim 60 wherein said package has a base wall portion, said base wall forming said penetratable portion of said package, and wherein placing said package into or onto said receiver apparatus causes said package to move under the force of gravity into engagement with said penetrating portion of said receiver apparatus.

30 35 62. The method of Claim 61 wherein said receiver apparatus includes a hollow interior chamber and wherein said flowable material flows into said hollow interior chamber when said penetrating portion of said receiver apparatus penetrates said penetratable portion of said flexible package.

63. The method of Claim 60 wherein said package comprises a base wall and a sidewall projecting upward from said base wall, said base wall defining said penetratable wall and having a center, said sidewall extending about the entire periphery of 5 said base wall, said penetrating portion of said receiver apparatus penetrating said base wall to form an aperture having plural legs radiating from said center of said base wall, with each of said legs terminating in an end portion located at a different position along the periphery of said base wall, said 10 legs of said aperture forming respective flaps in said base wall which flex to form an outlet through which said flowable contents of said package flow.

64. The method of Claim 63 wherein said wall of said package is of a regular geometric shape having plural corners, 15 and wherein said end portions of said legs of said cut terminate in respective ones of said plural corners.

65. The method of Claim 60 wherein said penetratable portion of said package includes a center and wherein said penetrating portion of said receiver apparatus begins 20 penetration at said center of said penetratable portion.

66. The method of Claim 65 wherein said penetratable portion comprises a bottom wall of said package, said bottom wall being of a regular geometric shape.

67. The method of Claim 66 wherein said regular geometric 25 shape includes plural corners and wherein said penetrating portion of said receiver apparatus penetrates said bottom wall from said center to each of said corners.